



CLEVELAND-CLIFFS INC.
Cleveland-Cliffs Minorca Mine Inc.
5950 Old Highway 53 N., Virginia, MN 55792
P 218.749.5910 clevelandcliffs.com

April 21, 2021

Regional Administrator
Air and Radiation Division
U.S. Environmental Protection Agency, Region 5 (A-18J)
77 West Jackson Boulevard
Chicago, IL 60604

**Re: Cleveland-Cliffs Minorca Mine Inc.
1st Quarter 2021 Excess Emissions and Monitoring System Performance Reports
Federal Implementation Plan for Regional Haze (FIP)**

On behalf of Cleveland-Cliffs Minorca Mine Inc. (Minorca), I am submitting the enclosed Excess Emissions and Monitoring System Performance Reports for the 1st quarter of 2021 as required by 40 CFR 52.1235(e)(7). It should be noted that while the continuous emissions monitoring requirements of the FIP were in effect in the reporting period, the emission limitation for NO_x is not yet applicable. 40 CFR 52.1235(b)(1)(v)(A) specifies that the NO_x limitation will become enforceable *"...55 months after May 12, 2016 and only after EPA's confirmation or modification of the emission limit..."*.

Minorca submitted a revision of the 38.16 lb SO₂/hr on a 30-day rolling average limit to U.S. EPA in accordance with 40 CFR 52.1235(b)(2)(v) on April 6, 2018. That section of the FIP provides that Minorca "may calculate a revised SO₂ limit based on one year of hourly CEMS emissions data reported in lbs SO₂/hr and submit such limit, calculations, and CEMS data to EPA." This provision to modify the SO₂ limit exists because EPA recognized that the initial SO₂ limit was based on "limited stack test data" (78 Fed. Reg. 8718) and did not reflect the variability of Minorca's operations. The revised emission limit calculation methodology follows the provisions of 40 CFR 52.1235(b)(2)(v) and results in an updated emission limit of 58.64 lbs SO₂/hr based on a 30-day rolling average (prior to adjusting to account for operating levels of the Minorca furnace which were less than capacity during the data collection period). Adjusting to reflect the emissions associated with operation of the furnace at capacity using the above equation results in a limit of 73.79 lbs SO₂/hr based on a 30-day rolling average. The revised limit became effective on the April 6, 2018 date of submittal of the limit revision package.

These reports were developed following the procedures and practices described in the Site Specific Monitoring Plan (SSMP) required by 40 CFR 52.1235(e)(8) and submitted to EPA on December 1, 2016.

Please contact Jaime Johnson, Minorca's Environmental Manager, at (218) 305-3337 should you have any questions or comments regarding this report.

Sincerely,

Robb Peterson
Operations Manager

Enclosed: 1st Quarter 2021 Excess Emissions and Monitoring System Performance Reports
1st Quarter 2021 RATA Summary Reports for SV 014-017, NO_x and SO₂

cc: Jaime Johnson (Cleveland-Cliffs Minorca Mine Inc.)

EU 026 Combined SO2 Emissions and Analyzer Downtime


CLIFFS

1

Quarterly Excess Emissions and Monitoring System Performance Report

EU 026 - Combined NOx Emissions and Monitor Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Generated:

04/06/2021 13:57

Facility Name:

Cleveland-Cliffs Minorca Mine Inc

Location:

5950 old Hwy 53, Virginia, MN

Description:

Indurating Furnace (EU 026)



CMS Data from:

EU26_NOx_30D_LbPerMBtu_1D

EDS Data from:

N/A

Emission Limitation:

1.5 lb NOx/MMBtu, 30-day rolling average. See Footnote [1].

Monitor Manufacturer, Model No., & Serial:

See downtime reports for individual

Date of Latest CMS Certification or Audit:

See downtime reports for individual

operating time for CMS:

88.71 Day(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

[1] The emission limitation does not apply until 55 months after May 12, 2016 and approval by EPA. The Indurating Furnace did not exceed 1.5 lb NOx/MMBtu on a 30-day rolling average basis in this quarter.

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

CMS downtime reported for EU026 NOx monitoring includes all downtime from the NOx concentration and Stack Flow analyzers installed on SV014, SV015, SV016, and SV017 if the minimum data availability required by 52.1235(c)(4)(viii)(C) are not met after the application of secondary data calculations used to determine "emission rates when CEMS data is not available due to downtime associated with QA/QC events" as required by 40 CFR 52.1235(e)(8)(iv). These calculations are described in detail within the site specific monitoring plan (SSMP) which was submitted to the EPA per the requirements of 40 CFR 52.1235(e)(8). Please refer to the downtime reports for the individual stack analyzers for details on their operation during the reporting period.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV 014 Flow Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV14_StackFlow_scfh_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: Sic Flowsic, 100H, 13088519
Date of Latest CMS Certification or Audit: 7/14/2020 (via NOx RATA)
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary

1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	3
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	3
3. Total Downtime as a percentage of operating time	0.14
4. Total Availability as a percentage of operating time	99.86

Beginning Date and Time of Downtime	End Date and Time of Downtime	Duration of Downtime	Reason for Monitor Downtime	Corrective Action Taken
2/12/2021 19:00	2/12/2021 21:59	3 hr.	Monitor Equipment Malfunction	Ice buildup on flow monitor. Ice was removed and analyzer was returned to service.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV014 NOx Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV14_NOx_Ppm_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: TAPI, T200H, 252
Date of Latest CMS Certification or Audit: 10/26/2020
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary	
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1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV014 SO2 Analyzer Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Generated:

04/06/2021 13:57

Facility Name:


Cleveland-Cliffs Minorca Mine Inc

Location:

5950 Old Hwy 53, Virginia, MN 55792

Description:

Indurating Furnace (EU 026)



CMS Data from:

SV14_SO2_Ppm_1H

EDS Data from:

N/A

Emission Limitation:

No limits apply to individual stacks.

Monitor Manufacturer, Model No., & Serial:

TAPI, T100H, 143

Date of Latest CMS Certification or Audit:

10/27/2020

Operating time for CMS:

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV15 Flow Analyzer Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Generated:

04/06/2021 13:57

Facility Name:

Cleveland-Cliffs Minorca Mine Inc

Location:

5950 Old Hwy 53, Virginia, MN 55792

Description:

Indurating Furnace (EU 026)



CMS Data from:

SV15_StackFlow_scfh_1H

EDS Data from:

N/A

Emission Limitation:

No limits apply to individual stacks.

Monitor Manufacturer, Model No., & Serial:

Sic Flowsic, 100H, 13178539

Date of Latest CMS Certification or Audit:

7/14/2020 (via NOx RATA)

Operating time for CMS:

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV015 NOx Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV15_NOx_Ppm_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: TAPI, T200H, 250
Date of Latest CMS Certification or Audit: 10/26/2020
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV015 SO2 Analyzer Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Facility Name:

Cleveland-Cliffs Minorca Mine Inc

Generated:

04/06/2021 13:57

Location:

5950 Old Hwy 53, Virginia, MN 55792

Description:

Indurating Furnace (EU 026)



CMS Data from:

SV15_SO2_Ppm_1H

EDS Data from:

N/A

Emission Limitation:

No limits apply to individual stacks.

Monitor Manufacturer, Model No., & Serial:

TAPI, T100H, 142

Date of Latest CMS Certification or Audit:

10/27/2020

Operating time for CMS:

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV016 Flow Analyzer Downtime

From:01/01/2021 00:00

Generated:04/06/2021 13:57

To:03/31/2021 23:59

Facility Name:Cleveland-Cliffs Minorca Mine Inc

Location:5950 Old Hwy 53, Virginia, MN 55792

Description:Indurating Furnace (EU 026)



CMS Data from:

EDS Data from:

Emission Limitation:

Monitor Manufacturer, Model No., & Serial:

Date of Latest CMS Certification or Audit:

Operating time for CMS:

SV16_StackFlow_scfh_1H

N/A

No limits apply to individual stacks.

Sic Flowsic, 100H, 13088520

7/14/2020 (via NOx RATA)

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV016 NOx Analyzer Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Generated:

04/06/2021 13:57

Facility Name:


Cleveland-Cliffs Minorca Mine Inc

Location:

5950 Old Hwy 53, Virginia, MN 55792

Description:

Indurating Furnace (EU 026)



CMS Data from:

SV16_NOx_Ppm_1H

EDS Data from:

N/A

Emission Limitation:

No limits apply to individual stacks.

Monitor Manufacturer, Model No., & Serial:

TAPI, T200H, 249

Date of Latest CMS Certification or Audit:

10/26/2020

Operating time for CMS:

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV016 SO2 Analyzer Downtime

From:

01/01/2021 00:00

To:

03/31/2021 23:59

Facility Name:

Cleveland-Cliffs Minorca Mine Inc

Generated:


04/06/2021 13:57

Location:

5950 Old Hwy 53, Virginia, MN 55792

Description:

Indurating Furnace (EU 026)



CMS Data from:

SV16_SO2_Ppm_1H

EDS Data from:

N/A

Emission Limitation:

No limits apply to individual stacks.

Monitor Manufacturer, Model No., & Serial:

TAPI, T100H, 144

Date of Latest CMS Certification or Audit:

10/27/2020

Operating time for CMS:

2,129.00 Hour(s)

CMS Performance Summary	
1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV017 Flow Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV17_StackFlow_scfh_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: Sic Flowsic, 100H, 13078504
Date of Latest CMS Certification or Audit: 7/14/2020 (via NOx RATA)
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary	
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1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	0
3. Total Downtime as a percentage of operating time	0.00
4. Total Availability as a percentage of operating time	100.00

There were no periods of monitor downtime during this reporting period except for the daily zero and span checks.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV017 NOx Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV17_NOx_Ppm_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: TAPI, T200H, 251
Date of Latest CMS Certification or Audit: 10/26/2020
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary

1. CMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	6
b. Non-Monitor equipment malfunctions	0
c. Quality assurance calibration	0
d. Other known causes	0
e. Unknown causes	0
2. Total CMS Downtime	6
3. Total Downtime as a percentage of operating time	0.28
4. Total Availability as a percentage of operating time	99.72

Beginning Date and Time of Downtime	End Date and Time of Downtime	Duration of Downtime	Reason for Monitor Downtime	Corrective Action Taken
2/6/2021 11:00	2/6/2021 15:59	5 hr.	Monitor Equipment Malfunction	Plugged probe filter. Filter was changed and analyzer was returned to service.
3/31/2021 23:00	3/31/2021 23:59	1 hr	Monitor Equipment Malfunction	Breaker tripped. Breaker reset and analyzer was returned to service.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Excess Emissions and Monitoring System Performance Report

SV017 SO2 Analyzer Downtime

From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** Cleveland-Cliffs Minorca Mine Inc
Generated: 04/06/2021 13:57 **Location:** 5950 Old Hwy 53, Virginia, MN 55792
Description: Indurating Furnace (EU 026)



CMS Data from: SV17_SO2_Ppm_1H
EDS Data from: N/A
Emission Limitation: No limits apply to individual stacks.
Monitor Manufacturer, Model No., & Serial: TAPI, T100H, 145
Date of Latest CMS Certification or Audit: 10/27/2020
Operating time for CMS: 2,129.00 Hour(s)

CMS Performance Summary

1. CMS downtime in reporting period due to:
 - a. Monitor equipment malfunctions 6
 - b. Non-Monitor equipment malfunctions 0
 - c. Quality assurance calibration 0
 - d. Other known causes 0
 - e. Unknown causes 0
2. Total CMS Downtime 6
3. Total Downtime as a percentage of operating time 0.28
4. Total Availability as a percentage of operating time 99.72

Beginning Date and Time of Downtime	End Date and Time of Downtime	Duration of Downtime	Reason for Monitor Downtime	Corrective Action Taken
2/6/2021 11:00	2/6/2021 15:59	5 hr.	Monitor Equipment Malfunction	Plugged probe filter. Filter was changed and analyzer was returned to service.
3/31/2021 23:00	3/31/2021 23:59	1 hr	Monitor Equipment Malfunction	Breaker tripped. Breaker reset and analyzer was returned to service.

There were no changes in continuous monitoring systems, processes, or controls that would have invalidated the CEMS certification test or adversely affected its ability to accurately measure the emissions from the indurating furnace during this reporting period.

Quarterly Cal Report

Stack A (SV14) - NOx Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:03 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:	SV14_NOX_P_Instrument	High	Serial Number:	252	
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 12:44	Low	250.0	60.8	60.6	24.3 %
01/26/21 12:48	Mid	250.0	139.9	141.6	56.0 %
01/26/21 12:52	Low	250.0	60.8	61.2	24.3 %
01/26/21 12:56	Mid	250.0	139.9	142.0	56.0 %
01/26/21 13:00	Low	250.0	60.8	61.1	24.3 %
01/26/21 13:04	Mid	250.0	139.9	142.0	56.0 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	60.800	61.000	0	0.3	CC285322	02/26/27 13:24
Mid	139.900	141.900	0	1.4	CC130313	11/09/23 13:25

Quarterly Cal Report

Stack A (SV14) - 02 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:03 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name: SV14_02D_P_Instrument		High		Serial Number: 197	
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 09:13	Low	20.9	5.5	5.4	26.2 %
01/26/21 09:19	Mid	20.9	10.1	9.7	48.3 %
01/26/21 09:25	Low	20.9	5.5	5.4	26.2 %
01/26/21 09:31	Mid	20.9	10.1	9.7	48.3 %
01/26/21 09:37	Low	20.9	5.5	5.4	26.2 %
01/26/21 09:43	Mid	20.9	10.1	9.7	48.3 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.500	5.400	0	1.5	CC502952	05/29/22 06:40
Mid	10.100	9.700	0	3.9	CC509100	03/07/21 06:42

Quarterly Cal Report

stack A (SV14) - SO2 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:03 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:	SV14_SO2_P_Instrument		High	Serial Number:	143
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 09:13	Low	20.0	5.0	5.4	25.1 %
01/26/21 09:19	Mid	20.0	11.0	11.1	55.2 %
01/26/21 09:25	Low	20.0	5.0	5.4	25.1 %
01/26/21 09:31	Mid	20.0	11.0	11.2	55.2 %
01/26/21 09:37	Low	20.0	5.0	5.5	25.1 %
01/26/21 09:43	Mid	20.0	11.0	11.1	55.2 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.000	5.400	0	8.4	CC502952	05/29/22 06:43
Mid	11.000	11.100	0	0.8	CC281931	05/10/23 15:39

Quarterly Cal Report

Stack B (SV15) - NOx Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:04 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV15_NOX_P_Instrument		High	Serial Number:		250
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 12:44	Mid	250.0	139.9	140.0	56.0 %		
01/26/21 12:48	Low	250.0	60.8	60.0	24.3 %		
01/26/21 12:52	Mid	250.0	139.9	140.2	56.0 %		
01/26/21 12:56	Low	250.0	60.8	59.7	24.3 %		
01/26/21 13:00	Mid	250.0	139.9	139.9	56.0 %		
01/26/21 13:04	Low	250.0	60.8	59.4	24.3 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Mid	139.900	140.000	0	0.1	CC130313	11/09/23 13:25
Low	60.800	59.700	0	1.8	CC285322	02/26/27 13:24

Quarterly Cal Report

stack B (SV15) - 02 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:04 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:	SV15_02D_P_Instrument	High	Serial Number:	250	
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 09:49	Low	20.9	5.5	5.3	26.2 %
01/26/21 09:55	Mid	20.9	10.1	9.7	48.3 %
01/26/21 10:01	Low	20.9	5.5	5.3	26.2 %
01/26/21 10:07	Mid	20.9	10.1	9.7	48.3 %
01/26/21 10:13	Low	20.9	5.5	5.3	26.2 %
01/26/21 10:19	Mid	20.9	10.1	9.7	48.3 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.500	5.300	0	3.3	CC502952	05/29/22 06:40
Mid	10.100	9.700	0	3.9	CC509100	03/07/21 06:42

Quarterly Cal Report

stack B (SV15) - SO2 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:05 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV15_SO2_P_Instrument		High	Serial Number:		142
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 09:49	Low	20.0	5.0	5.2	25.1 %		
01/26/21 09:55	Mid	20.0	11.0	10.8	55.2 %		
01/26/21 10:01	Low	20.0	5.0	5.2	25.1 %		
01/26/21 10:07	Mid	20.0	11.0	10.8	55.2 %		
01/26/21 10:13	Low	20.0	5.0	5.2	25.1 %		
01/26/21 10:19	Mid	20.0	11.0	10.8	55.2 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.000	5.200	0	3.8	CC502952	05/29/22 06:43
Mid	11.000	10.800	0	2.2	CC281931	05/10/23 15:39

Quarterly Cal Report

stack C (SV16) - NOx Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:05 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV16_NOX_P_Instrument		High	Serial Number:		249
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 13:11	Low	450.0	113.6	114.8	25.2 %		
01/26/21 13:15	Mid	450.0	248.9	257.6	55.3 %		
01/26/21 13:19	Low	450.0	113.6	114.5	25.2 %		
01/26/21 13:23	Mid	450.0	248.9	256.2	55.3 %		
01/26/21 13:28	Low	450.0	113.6	113.1	25.2 %		
01/26/21 13:32	Mid	450.0	248.9	255.9	55.3 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	113.600	114.100	0	0.5	CC118291	02/19/27 13:36
Mid	248.900	256.600	0	3.1	EB0093175	02/15/27 13:37

Quarterly Cal Report

stack C (SV16) - 02 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:05 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:	SV16_02D_P_Instrument		High	Serial Number:	249
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 10:25	Low	20.9	5.5	5.2	26.2 %
01/26/21 10:31	Mid	20.9	10.1	9.6	48.3 %
01/26/21 10:37	Low	20.9	5.5	5.2	26.2 %
01/26/21 10:43	Mid	20.9	10.1	9.6	48.3 %
01/26/21 10:49	Low	20.9	5.5	5.2	26.2 %
01/26/21 10:55	Mid	20.9	10.1	9.6	48.3 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.500	5.200	0	5.1	CC502952	05/29/22 06:40
Mid	10.100	9.600	0	4.9	CC509100	03/07/21 06:42

Quarterly Cal Report

stack C (SV16) - SO2 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:06 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV16_SO2_P_Instrument		High	Serial Number:		144
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 10:25	Low	20.0	5.0	5.3	25.1 %		
01/26/21 10:31	Mid	20.0	11.0	11.1	55.2 %		
01/26/21 10:37	Low	20.0	5.0	5.5	25.1 %		
01/26/21 10:43	Mid	20.0	11.0	11.2	55.2 %		
01/26/21 10:49	Low	20.0	5.0	5.5	25.1 %		
01/26/21 10:55	Mid	20.0	11.0	11.2	55.2 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.000	5.400	0	8.4	CC502952	05/29/22 06:43
Mid	11.000	11.200	0	1.1	CC281931	05/10/23 15:39

Quarterly Cal Report

Stack D (SV17) - NOx Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:06 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:	SV17_NOX_P_Instrument		High	Serial Number:	251
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span
01/26/21 13:11	Mid	450.0	248.9	253.9	55.3 %
01/26/21 13:15	Low	450.0	113.6	116.0	25.2 %
01/26/21 13:19	Mid	450.0	248.9	254.2	55.3 %
01/26/21 13:23	Low	450.0	113.6	116.2	25.2 %
01/26/21 13:28	Mid	450.0	248.9	254.4	55.3 %
01/26/21 13:32	Low	450.0	113.6	116.9	25.2 %

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Mid	248.900	254.200	0	2.1	EB0093175	02/15/27 13:37
Low	113.600	116.400	0	2.4	CC118291	02/19/27 13:36

Quarterly Cal Report

stack D (SV17) - 02 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:07 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV17_02D_P_Instrument		High	Serial Number:		251
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 11:01	Low	20.9	5.5	5.3	26.2 %		
01/26/21 11:07	Mid	20.9	10.1	9.7	48.3 %		
01/26/21 11:13	Low	20.9	5.5	5.3	26.2 %		
01/26/21 11:19	Mid	20.9	10.1	9.7	48.3 %		
01/26/21 11:25	Low	20.9	5.5	5.3	26.2 %		
01/26/21 11:32	Mid	20.9	10.1	9.7	48.3 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.500	5.300	0	3.3	CC502952	05/29/22 06:40
Mid	10.100	9.700	0	3.9	CC509100	03/07/21 06:42

Quarterly Cal Report

stack D (SV17) - SO2 Instrument



From: 01/01/2021 00:00 **To:** 03/31/2021 23:59 **Facility Name:** ArcelorMittal Minorca Mine
Generated: 04/06/2021 14:07 **Location:** 5950 Old Hwy 53, Virginia,

Instrument Name:		SV17_SO2_P_Instrument		High	Serial Number:		145
Calibration Time	Cal Gas Level	Span Value	Reference Value	Actual Value	Ref Value As Pct Span		
01/26/21 11:01	Low	20.0	5.0	5.4	25.1 %		
01/26/21 11:07	Mid	20.0	11.0	11.1	55.2 %		
01/26/21 11:13	Low	20.0	5.0	5.5	25.1 %		
01/26/21 11:19	Mid	20.0	11.0	11.3	55.2 %		
01/26/21 11:25	Low	20.0	5.0	5.5	25.1 %		
01/26/21 11:32	Mid	20.0	11.0	11.1	55.2 %		

Overall Result: Pass

Cal Gas Level	Reference Mean	Actual Mean	Alt Perf Spec	Result	Cylinder Id	Expiration Date
Low	5.000	5.500	0	9.1	CC502952	05/29/22 06:43
Mid	11.000	11.200	0	1.1	CC281931	05/10/23 15:39